

California Communities Environmental Health Screening Tool (Cal-EnviroScreen)

OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

Southern California Association of Governments
December 12, 2012

Program Origins in Environmental Justice

- Statutory definition of EJ
 - “Environmental justice means the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations, and policies.”
Gov. Code §65040.12(e), 1999
- Cal/EPA’s responsibilities
 - Required development of interagency environmental justice strategy for Cal/EPA (completed 2004)
 - Required each of the Cal/EPA boards and departments to review, identify, and address program obstacles impeding the progress of environmental justice
Public Resources Code §71113, 2000

Bases of concern for cumulative impacts

- Possibility that even if all of the regulated industries comply with the law, environmental conditions may still be unhealthy.
- Concerns that *minority and lower socio-economic communities* bear **high** and **disproportionate** burdens of environmental pollutants (environmental justice concerns).

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Science behind cumulative impacts

- Numerous studies have shown that multiple pollution sources are disproportionately concentrated in low-income communities with high-minority populations.
- Studies have reported communities with certain socioeconomic factors (i.e. low-income, low-education) have increased sensitivity to pollution.
- Combination of multiple pollutants and increased sensitivity in these communities can result in higher cumulative pollution impacts.

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How We Got Here (Process)



- California Environmental Justice Advisory Committee
 - ▣ Recommended cumulative impacts as an important EJ issue
- Environmental Justice Action Plan (October 2004)
 - ▣ Called for guidance on cumulative impacts
- CA Interagency Working Group on Environmental Justice
 - ▣ Adopted working definition for cumulative impacts
- Office of Environmental Health Hazard Assessment
 - ▣ Designated lead on cumulative impacts guidance development
 - ▣ Convened a Work Group of external stakeholders to provide advice. The Work Group met 7 times.

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December 2010 Project Report

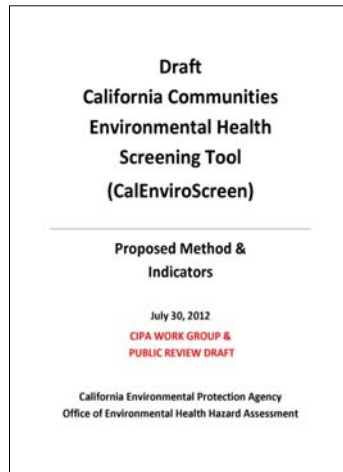


- Described an approach to evaluating cumulative impacts across California.
 - ▣ Screening tool for comparing the cumulative impacts of multiple pollution sources in CA communities, while accounting for socioeconomic factors that can increase a community's vulnerability to pollution.
 - ▣ Identify communities with high cumulative impacts.

Available on the OEHHA website at:
<http://oehha.ca.gov/ej>

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2012 Draft CalEnviroScreen Tool



- Identifies 19 indicators of environmental and socioeconomic conditions.
- Analyzes indicators in 1800 CA zip codes.
- Presents a broad picture of the relative burdens communities face from environmental pollution.
- Reflects a “work in progress”

Stakeholder Engagement Process for CalEnviroScreen

- Conducted 12 public workshops
 - ▣ Cumulative Impacts Precautionary Approach (“CIPA”) Workgroup
 - ▣ 7 Regions around the state
 - ▣ Business Communities, Local Government, Tribes
 - ▣ Academic workshop to receive detailed comments from experts in the field
 - ▣ Received numerous oral comments and questions (e.g., > 1000)
- Presented to California Council for Environmental and Economic Balance, CAPCOA Board, others
- Comment period ended October 16
 - ▣ Received 29 written submissions commenting on tool

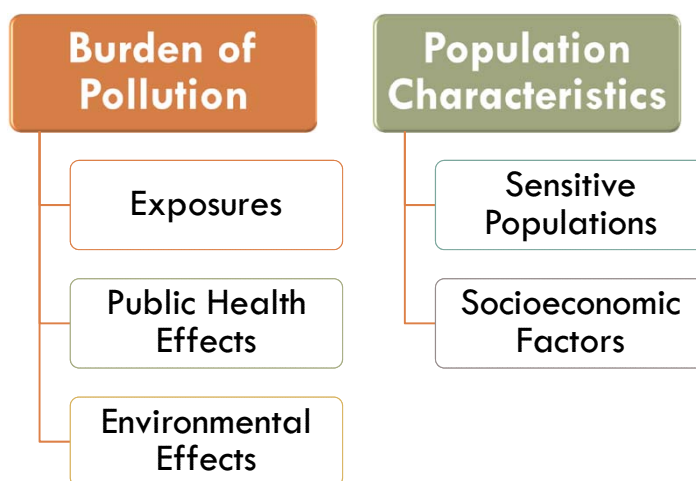
Working Definition

“Cumulative impacts means **exposures, public health or environmental effects** from the combined **emissions and discharges** in a **geographic area**, including environmental **pollution** from all **sources**, whether single or multi-media, routinely, accidentally, or otherwise released. Impacts will take into account **sensitive populations** and **socioeconomic factors**, where applicable and to the extent data are available.”

-- Cal/EPA Interagency Working
Group on Environmental Justice

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Primary Components



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- Contact with pollution

- Disease and other health conditions that increases susceptibility to pollutants

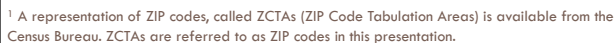
- Adverse environmental conditions caused by pollutants

- Populations with biological traits that may magnify the effects of pollutant exposures

- Community characteristics that result in increased vulnerability to pollutants

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Proposed Geographical Unit: ZIP Code¹



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Components are characterized by indicators

Pollution Burden			Population Characteristics	
Exposures	Public Health Effects	Environmental Effects	Sensitive Populations	Socio-economic Factors
<input type="checkbox"/> Ozone concentrations <input type="checkbox"/> PM 2.5 concentrations <input type="checkbox"/> Traffic density <input type="checkbox"/> Pesticide use <input type="checkbox"/> Toxic releases from facilities <input type="checkbox"/> <i>Drinking water quality*</i>	<input type="checkbox"/> Low birth weight rate <input type="checkbox"/> Asthma ER visit rate <input type="checkbox"/> <i>Heart disease mortality rate*</i> <input type="checkbox"/> <i>Cancer Mortality rate*</i> <input type="checkbox"/> <i>* under development or revision</i>	<input type="checkbox"/> Clean-up sites (brownfields) <input type="checkbox"/> Leaking underground storage tanks and cleanups <input type="checkbox"/> Solid waste sites and facilities and hazardous waste facilities <input type="checkbox"/> Impaired water bodies	<input type="checkbox"/> Prevalence of children <input type="checkbox"/> Prevalence of elderly	<input type="checkbox"/> Educational attainment <input type="checkbox"/> Household income <input type="checkbox"/> Poverty <input type="checkbox"/> Percent non-white

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Criteria for indicator selection

- ☐ Provide a good measure of the contribution to the component
- ☐ Pollution burden indicators should relate to issues that may be actionable by Cal/EPA
- ☐ Population characteristic indicators should relate to demographic factors that may influence vulnerability to disease
- ☐ Publicly available
- ☐ Statewide and location-based information
- ☐ Good quality data (e.g., covers the state, accurate, current)

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Proposed model for aggregating components



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Range of Scores for Components

Component		Range of Possible Scores
+	Exposures	1-10
	Environmental effects	1-5
	Public health effects	1-5
+	Sensitive populations	1-3
	Socioeconomic factors	1-3
Cumulative impact		6-120

Considering revised scoring based on comments.

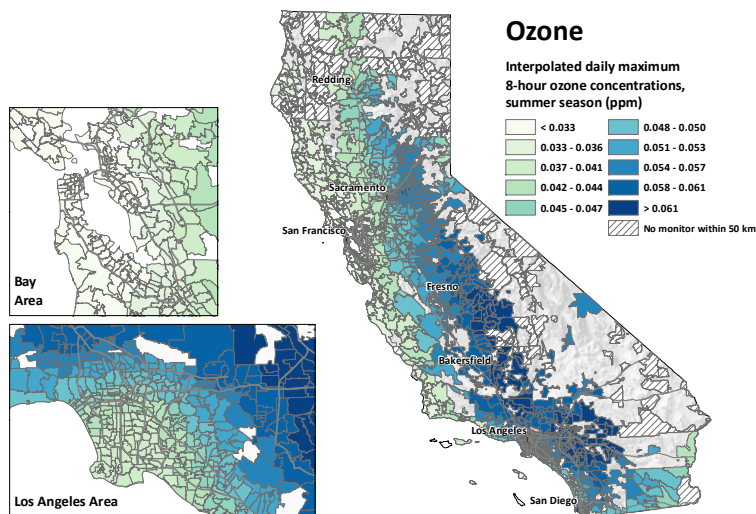
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Indicator: Ozone

- Air Resources Board's Air Monitoring Network
- **Indicator:** Daily maximum 8-hour ozone concentrations for the summer season
 - ▣ Interpolated from nearest monitors to geographic center of the ZIP code by ARB
 - ▣ Three year (2007-2009) average
- Assign a percentile (>0 – 100) to all California ZIP codes

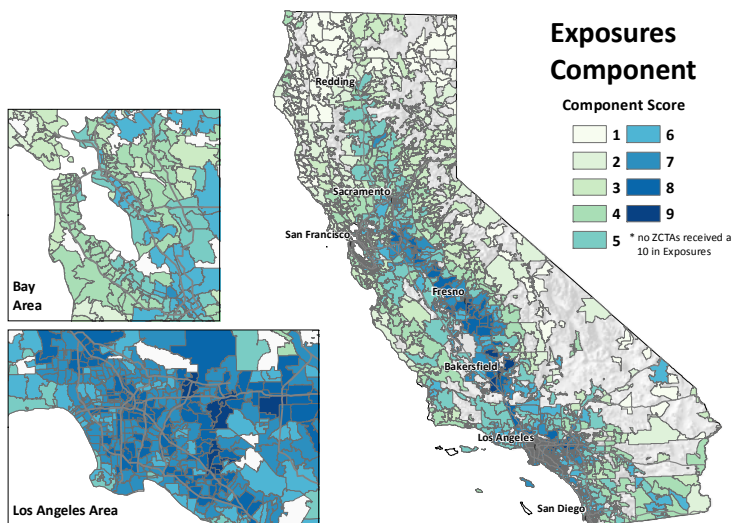
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Preliminary Statewide Map: Ozone



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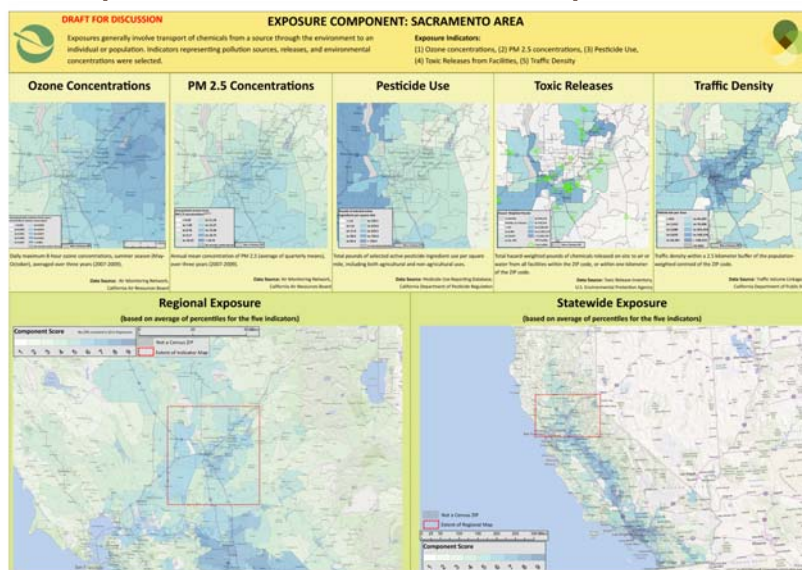
Preliminary Component Score: Exposures Indicators



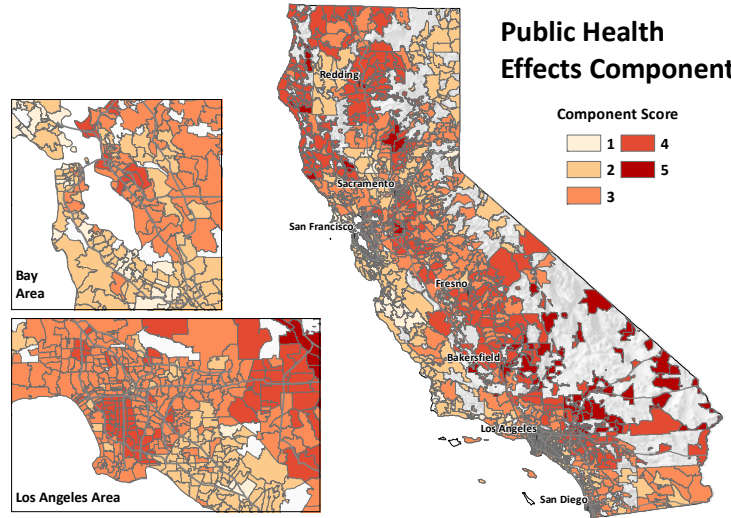
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Example of indicator and component scoring

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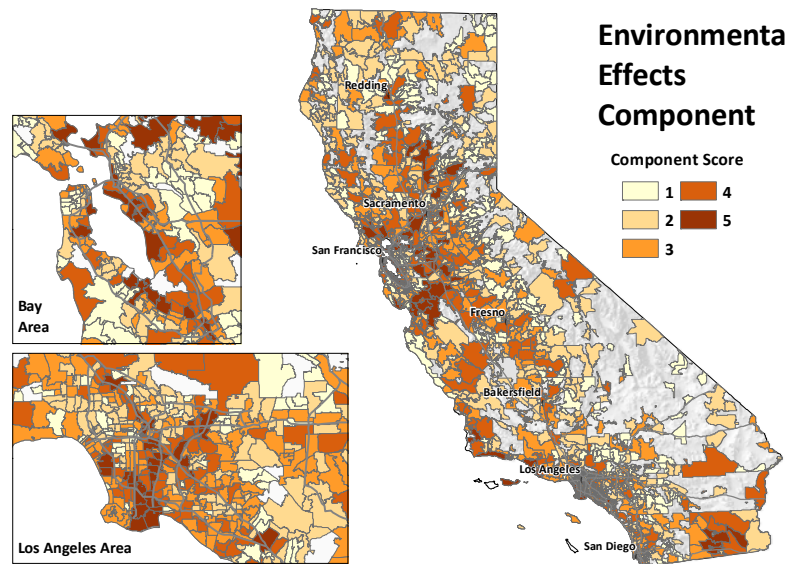


Preliminary Component Score: Public Health Indicators



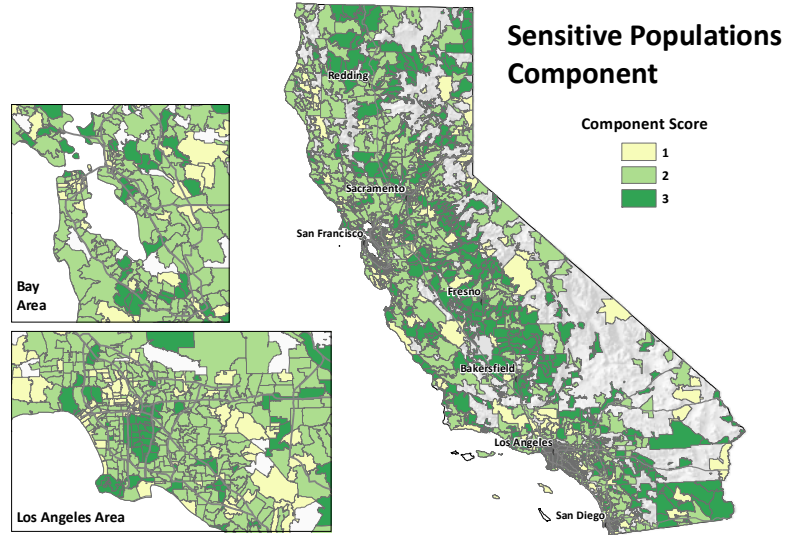
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Preliminary Component Score: Environmental Effects Indicators



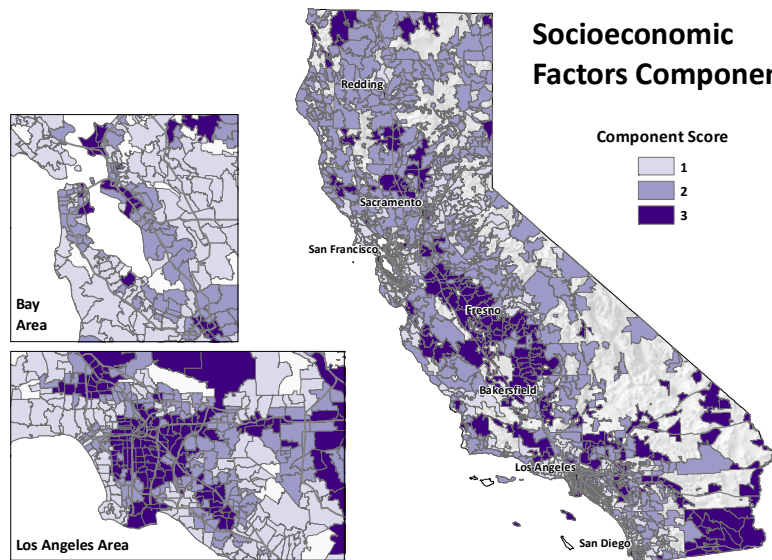
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Preliminary Component Score: Sensitive Populations



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Preliminary Component Score: Socioeconomic Factors



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Some Potential Uses of Tool

- To aid ongoing planning and decision-making within Cal/EPA
- To provide a baseline of information
- The tool is not
 - ▣ intended to be used as the sole determining factor in decision-making
 - ▣ to replace a formal risk assessment

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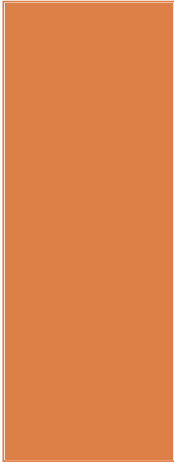
SB 535 (De Leon, 2012)

- Cal/EPA shall identify disadvantaged communities for investment opportunities based on geographic, socioeconomic, public health and environmental hazard criteria.
- Department of Finance triennial investment plan for Greenhouse Gas Reduction Fund must allocate at least 25 percent to projects that benefit these communities, and at least 10 percent to projects located in these communities.


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Examples of comments received on the methodology

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- Geographical unit: Consider using census tracts instead of ZIP codes
 - Components should be weighted differently
 - Consider different method than percentiles for scoring individual indicators
 - Consider additive rather than multiplicative model (to aggregate pollution burden and population characteristics)

Next Steps

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- Review Comments from the Public and Making Revisions
 - Revise indicators and analysis
 - Release a revised CalEnviroScreen for public comment early 2013
 - CIPA workgroup meeting
 - Consider comments
 - Finalize CalEnviroScreen early 2013

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How to learn more...

Project reports, meetings, and archive of public materials:

Website

<http://www.oehha.ca.gov/ej/index.html>

E-mails when new information is available or when meeting are announced:

OEHHA's listserv, select "Cumulative Impacts"

<http://www.oehha.ca.gov/Listservs/default.asp>